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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Terry J. Anderson, Esq.
NORTHROP GRUMMAN CORPORATION
1840 Century Park East
Los Angeles, CA 90067-2199

EXAMINER

APPIAH, CHARLES NANA

ART UNIT

PAPER NUMBER

2686

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,296

Applicant(s)

STRATMOEN ET AL.

Examiner

Charles Appiah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-41 and 44-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4-28 and 47-67 is/are allowed.
- 6) ☒ Claim(s) 29-41 and 44-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 29-33, 36-39, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Patel (5,315,636)** in view of **Jones et al. (6,259,418)**.

Regarding claim 29, Patel discloses a communication device comprising: a flexible smart card (26) having a length, width, and thickness similar to the dimensions of a credit card, the smart card having components embedded within including a receiver, (96), an antenna (102), man-machine interface (88,90), a processor (78), and a power supply (battery), wherein the device communicates with a base station (see col. 11, lines 56-64). Patel fails to teach the antenna being a monopole antenna embedded on a thin flexible sheet, which is hinged to the edge of the smart card such that the monopole antenna may be deployed by unfolding the sheet from the smart card.

Jones discloses a modified monopole antenna for use with small wireless devices, which is particularly suited for adaptation to thin profile expansion cards such as a PC standard card (see abstract). According to Jones, the antenna includes a retractable extension which is hinged, may be deployed from the retractable position to a position of optimal performance in a position which fully or partially falls within the form factor of relatively flat extension to an upright position for improved reception performance (see col. 2, lines 35-67, col. 5, lines 25-60). Jones shows that the antenna

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element may be stowed by folding along a hinge and may be retracted into the device for storage and protection (see col. 6, lines 5-25) and as illustrated in Fig. 6, the retractable antenna extension is hinged and comprises a ground plane element for improved antenna performance (see col. 6, lines 26-36).

It would therefore have been obvious to one of ordinary skill in the art to incorporate the retractable and extendable antenna with a novel geometric configuration into Patel's communication device in order to provide an antenna, which can be combined with thin profile devices without substantially increasing space requirements as taught by Jones.

The combination of Patel and Jones fail to explicitly teach wherein the thin flexible sheet have a length of about 9.6 cm and a width of about 6.4 cm.

However, examiner maintains that the mere shape and size of the flexible sheet, such as 9.6 cm x 6.4 cm is well within the ordinary level of skill of those antenna artisans employed in the art. As evidence of obviousness, note Fig. 6 of Jones, where the flexible film is shaped to correspond with the shape and size of the ground plane 68. the size of the antenna housing is therefore obvious to the skilled artisan in order to fit a particular housing/card for electrical or aesthetic reasons.

Regarding claim 30, Patel further teaches a transmitter embedded within the smart card (TX 94, Fig. 3).

Regarding claims 31 and 32 the combination of Patel and Jones fail to disclose that the receiver utilize frequency shift keying (FSK) or a direct sequence spread spectrum (DSSS) differential phase shift keying (DPSK) modulator.

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However, it is very well known in the art that direct sequence spread spectrum communication is highly resistant to interference, fading, multipath and jamming and that DSS modulation techniques using phase shift keying provides a low error rate and is simple to implement. Examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art to use direct sequence spread spectrum modulation techniques including frequency shift keying and differential phase shift keying in Patel as modified by Jones in order to provide communications which is highly resistant to RF interference, fading, multipath, jamming, has a low error rate and which is easy to implement.

Regarding claim 33, Patel's display (88) is capable of displaying textual information (see col. 11, lines 11-19). The combination of Patel and Jones fail to specifically disclose that the display is also capable of displaying graphical information.

However, examiner takes Official Notice that it is very well known in the art to provide telephone displays having graphical information display capability and as such it would have been obvious to one of ordinary skill in the art to modify Patel as modified by Jones such that the display is capable of displaying graphical information, in order to provide more information and options to a user.

Regarding claim 36, Patel shows the power supply comprising a primary battery (see battery Fig. 3).

Regarding claims 37-39, Patel meets all limitations as applied to claim 36 above, but the combination of Patel and Jones do not specifically teach that the primary

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battery is a lithium non-rechargeable battery and that the power supply comprises a secondary battery, which is a lithium rechargeable battery.

However, it is a very well known practice in the art that a lithium battery is light weight and has good conductivity and high voltage and also it is known in the art to provide secondary or back-up rechargeable sources of power to portable communications device in order to keep the device powered when a primary power supply fails, and as such it would therefore have been obvious to one of ordinary skill in the art to use a primary power source such as a lithium non-rechargeable battery as well as a secondary battery in order to provide a power source which is light, has good conductivity and high voltage and also provision of backup power in case the primary power source fails in the system of Patel as modified by Jones.

Regarding claim 40, Patel as modified by Jones fail to teach that the power supply comprises a constant current source charger.

Examiner takes Official Notice that it is known in the art to provide a charger to constantly keep a secondary power source supplied and a low dropout analog regulator to extend the life of a battery.

Therefore it would have been obvious to one of ordinary skill in the art to modify Patel, such that the power supply comprises a low dropout analog regulator in order to extend the life of the battery for powering the electronic device.

Regarding claim 41, Patel teaches that, combining the phone device's wireless communications with the convenience and versatility of a credit card and which can provide several functions (see col. 8, lines 53-57). Patel as modified by Jones,

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however, fail to specifically teach that the credit card-sized wireless communication system has a length of about 9.6cm, a width of about 6.4cm and a thickness of about 0.79mm.

However, examiner maintains that the mere shape and size of the flexible sheet, such as 9.6 cm x 6.4 cm is well within the ordinary level of skill of those antenna artisans employed in the art. As evidence of obviousness, note Fig. 6 of Jones, where the flexible film is shaped to correspond with the shape and size of the ground plane 68. the size of the antenna housing is therefore obvious to the skilled artisan in order to fit a particular housing/card for electrical or aesthetic reasons. Furthermore, since Patel teaches a single conveniently carried device that combines the versatility of a credit card and performs several major functions, it would have been obvious to one of ordinary skill in the art to provide the conveniently carried credit card-sized device with any convenient dimensions subject to design and circuit constraints.

3. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Patel** and Jones as applied to claim 33 above, and further in view of **Cheung et al. (6,541,908)**.

Regarding claim 34, Patel discloses a liquid crystal display (see col. 11, lines 11-19), but the combination of Patel and Jones fail to teach that the display is a thin polymer emissive display.

Cheung discloses the manufacture of electronic light emissive displays. According to Cheung combining an emissive display in which the light emitting medium comprises a light emitting organic polymer (see col. 10, lines 25-53), with control

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electronics is particularly useful for miniature display applications which provides high resolution and low cost particularly desired for wireless or mobile applications where low power and high efficiency can minimize weight and increase battery life (see col. 4, lines 5-37).

It would therefore have been obvious to one of ordinary skill in the art to provide the organic polymer emissive display application as the display in Patel as modified by Jones in order to have a miniature display with high resolution and low cost as taught by Cheung

4. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Patel** and Jones et al as applied to claim 29 above, and further in view of **Spall et al. (6,097,934)**.

Regarding claim 44, Patel further shows an antenna (102) affixed to at least one of a front side and backside of the smart card (see Fig. 3), while Jones teaches a monopole antenna see Figs 1-6), but the combination of Patel and Jones do not specifically disclose that the antenna is patch antenna.

Spall discloses that monopole, dipole and patch antennas are all suitable for use with radiotelephones (see col. 5, lines 31-41).

It would therefore have been obvious to one of ordinary skill in the art to modify Patel with Spall's antennas such that the antenna is either a monopole, dipole or patch antenna, in order to provide a suitable antenna as desired by the portable device application.

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5. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Patel and Jones et al** as applied to claim 29 above, and further in view of **Puthuff (6,112,103) and Jarger (4,293,818)**.

Regarding claim 45, Patel as modified by Jones do not specifically disclose a microphone, which is a MEMS microphone.

Puthuff discloses a personal communication device that includes voice response architecture and a microphone (see voice recognition command manager, Fig. 4, col. 6, lines 3-57).

It would therefore have been obvious to one of ordinary skill in the art to modify Patel and Jones with Puthuff's voice recognition capability, such that the device has a voice response capability in order to provide a user with optional convenient method for entering information into the device.

The combination of Patel, Jones and Puthuff fail to teach that the device comprises an integrated broadband processor.

Jarger teaches a frequency modulation detection system that includes a broadband processor (55), which may be used for improving the shape of signal pulses in a frequency shift keying system (see Fig. 2, col. 4, lines 39-43).

It would therefore have been obvious to one of ordinary skill in the art to implement the combination of Patel, Jones and Puthuff using broadband processing as taught by Jarger in order to improve the shape of signal pulses of frequency shift keying.

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6. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Patel and Jones et al** as applied to claim 29 above, and further in view of **Dennison et al. (5,235,633)**.

Regarding claim 46, Patel and Jones fail to teach that the wireless communications device receives its location from GPS and uploads the location information to the base station.

Dennison discloses a wireless telephone that receives its location from a GPS system and uploads the location information to a base station, for the purpose of handing off the telephone to a cell site that is the most appropriate for its location (see abstract).

It would therefore have been obvious to provide GPS for providing location that is uploaded to a base station for the benefit of handing off the device to a cell site that is appropriate and provides good quality communications.

Allowable Subject Matter

7. Claims 1, 2, 4-28 and 47-67 are allowed.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Park 5,828,346), Rossi (5,918,163), Hollander et al. (6,172,645) and Aldous (6,618,013) discloses retractable and extendable antennas for use with card sized communication devices.

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Response to Arguments

9. Applicant's arguments with respect to claims 29-41, and 44-46 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Appiah whose telephone number is 703 305-4772. The examiner can normally be reached on M-F 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 703 305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CA


CHARLES APPIAH
PRIMARY EXAMINER